DOCUMENT RESUME

ED 041 826 SP 004 070

AUTHOR Ober, Richard L.
TITLE Multidimensionality as a Means for Placing Teaching Practice and Personal Beliefs into Closer Agreement.
PUB DATE 70
NOTE 14p.; Paper presented at the annual meeting of AERA, Minneapolis: March 2-6, 1970

EDRS PRICE EDRS Price MF-$0.25 HC-$0.80
DESCRIPTORS *Classroom Observation Techniques, *Effective Teaching, Laboratory Techniques, Simulation, *Teacher Behavior, *Teacher Education, Teacher Educators, *Teacher Role

ABSTRACT

Far too many teacher training programs fail to prepare teachers properly to translate theory and beliefs concerning teaching effectiveness into practice at the classroom level. To improve this situation, professors of education need to be innovative and to take purposeful steps to develop new programs with fresh approaches that will succeed in bridging the theory-practice gap. One technique which shows promise is systematic observation and a number of programs for training teachers in its use have been developed. However, the majority of these make use of only a single system. The practice called multidimensionality uses several systems simultaneously to view the same classroom situation and shows promise of being more effective than the use of a single system. Programs incorporating the multidimensional-systematic observational approach by their very nature tend to be more laboratory-oriented than lecture-oriented. The student is frequently involved in data collection activities both under simulated and actual conditions. He learns to observe and to be observed. He experiments with his own behavior and he observes his peers as they experiment with their behavior. The intended final outcome is that the student will begin to see his role more clearly and that he will perceive the teaching act to be more predictable than uncontrollable. (Author/MBM)

ED041826

MAY 4 1970

Multidimensionality as a Means for Placing Teaching Practice and Personal Beliefs into Closer Agreement

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Richard L. Ober
University of South Florida

A paper read as a part of the annual meeting of the American Educational Research Association, Minneapolis, Minnesota, March 2-6, 1970.

SP004070

From all indications, professors of education have an enviable talent for having an impact on the beliefs of teachers--at least at the cognitive-verbal level. Support for this conclusion can be found by considering the number of students who finally succeed in passing courses in teacher education. Of all who enroll initially, nearly all pass! And in this case, passing usually implies that the student was able to perform acceptably on a final examination and/or that he was successful in preparing a term paper (project) to the satisfaction of the professor. Both tasks--the examination and the paper--are of the cognitive-verbal variety and both are normally framed skillfully by the student to agree with and to reflect clearly the beliefs espoused by the professor during the course.

However, in spite of this one minor degree of apparent success, most courses in teacher education ultimately miss the mark. Poor teaching is probably not so much due to a lack of proper beliefs on the part of the teacher as it is to his failure to translate his beliefs into congruent practice in the classroom. This subtle twist of fate causes plaguing problems for teachers. They become frustrated. On the one hand they are misled to assume that, because they received passing grades in education courses, they understand the theories of learning and teaching; yet on the other hand, they experience failure after failure as they practice in the reality of the classroom.

Identification and statement of the problem here is rather obvious: teacher training programs are simply not geared to prepare teachers to translate beliefs and theory into practice: teachers meet failures and become frustrated. However obvious identification and statement of the problem might be, its resolution is not so obvious. In an attempt to propose a resolution to this problem this discussion deals with the general question - How can systematic observation* and multidimensionality** be combined in an effort to help teachers to bridge the beliefs-practice gap?

After considerable research and experimentation, the case for systematic observation has been fairly well established. Several researchers (1, 3, 6) have reported findings in common to indicate that teachers who have been formally trained to use an observational system tend to behave differently in the classroom than their untrained colleagues. Differences tend to point in the direction of the trained teachers exhibiting teaching behaviors that are in closer agreement with their own personally stated beliefs concerning teaching effectiveness than those exhibited by the untrained.

---

*An observational system is defined as any technique designed to identify, examine, classify, and quantify specific behaviors in the classroom.

**Multidimensionality is the simultaneous use of more than one observational system to observe the same given classroom situation.

This phenomenon is noteworthy and deserves further consideration. How can learning an observational system have such an effect on a teacher? The theoretical explanation of this phenomenon is two-fold. First, an operational understanding of an observational system provides the teacher with a basic rationale and theoretical framework for looking at teaching behavior--both his own and that of others. He is able to separate total teaching behavior into descrete, yet interacting, strategies that can be managed and studied. This is the "awareness" factor of teacher behavior.

Second, this same inherent rationale and theoretical framework also enable the teacher to monitor his behavior as he teaches. Thus he is able to adapt his behavior to accomodate the unique condition of a particular situation. This is the "control" factor of teacher behavior.

Together, these two factors--awareness and control--permit the teacher to 1) analyze a given situation in terms of separate interacting variables, 2) select strategies that are appropriate to it, 3) execute these strategies, and 4) obtain immediate on-the-spot feedback which, in turn, allows him to evaluate the apparent effectiveness of his behavior while still involved in the particular ongoing situation.

Assuming then that the teacher has established a sound foundation of learning and teaching theories, he is now able to put

it into purposeful practice with confidence. He is in better command of the situation. He manipulates the situational variables rather than allowing them to manipulate him.

The past few years have witnessed a number of teacher training programs being built around one observational system or another. Favorable results have been reported repeatedly. However, with very few exceptions, programs of this type have incorporated only a single observational system. The Flanders system of interaction analysis (1) is an example of this trend. Numerous programs have mushroomed up around the country in which interaction analysis, as it has grown to be known, has served as a training technique with satisfactory results.

Most observational systems including interaction analysis are limited to the consideration of only a single dimension of the classroom (i.e., verbal, nonverbal, cognitive, affective, social, emotional, teacher, student, etc.). But the classroom is a complex system consisting of almost innumerable dynamic elements representing several dimensions. As a result, the name of the game when studying the classroom is really "studying classroom interaction." To study the classroom using a single instrument, then, results in seeing only a part of the action and seeing it in the absence of the others.

This is where the notion of multidimensionality shows great

promise. Multidimensionality, as it is used in the practical context, is the practice of using more than one observational system simultaneously to study the same classroom situation.

Whereas a single observational system provides an indepth look at the behaviors constituting a single dimension of the classroom, several systems used simultaneously permit the behaviors of several systems to be observed and studied as they interact. At least two advantages are to be gained from such an approach:

1) In terms of sheer numbers alone, the student becomes acquainted with a much greater total number of behaviors. There are now many available for his consideration. The repertoire of behaviors that he can identify is expanded. Since he is now <u>aware</u> of more behaviors, he has more at his disposal from which to <u>choose</u> in practice.

2) The student is not required to study a particular situation in terms of the limited number of descrete behaviors that comprise a single dimension. Rather, he is now able to consider--and, thus, <u>control</u>--the dynamic interaction of <u>many</u> behaviors representing <u>several</u> dimensions. For instance he might choose to manipulate his verbal behavior to see what effect it has on the cognitive level at which the student is operating. Or he might experiment with various forms of imagery (concrete, representative, abstract) to determine how certain stimuli affect the verbal behavior of students.

With a larger repertoire of teaching behaviors at his command, the teacher is more skillful in moving from one behavior to another with ease and confidence. The total effect is a greater flexibility and a greater chance for final success.

The practice of using several observational systems concurrently in the same training program is historically more recent than the use of a single system. Consequently, evaluation studies of programs of this sort are scattered and imcomplete. Several programs featuring the multidimensional approach are currently underway and under study. More definite reports concerning their success is forthcoming.

Most of the current programs featuring muldimensionality have certain training experiences in common*. For example, they normally include such experiences as training in objective formulation, formal training in several observational systems, microteaching, and infield teaching experiences. Figure 1 shows a typical outline format for a training program using multidimensionality systematic observational techniques.

Training in formulating learning objectives (Figure 1, I) is neither novel nor peculiarly unique to the multidimensional approach. Experiences of this sort are common practice and basic to any general methods course.

Section II and part A3 of section III are the innovative characteristics of the program. In section II are listed four systems that have been used with success in the past. The Reciprocal Category System (7) is designed to consider the verbal

---

*Programs using the multidimensional approach have been in operation at University of Florida, University of South Florida, and West Virginia University.

Figure 1

Outline of General Methods Course Incorporating Multidimensionality and Systematic Observation

I. Training in the formulation of learning objectives

A. The mechanical skill of stating objectives in behavioral terms.

B. Classifying objectives according to cognitive level ([Bloom's] Taxonomy of Educational Objectives: Cognitive Domain [2]) (optional)

C. Classifying objectives according to affective level ([Krathwohl's] Taxonomy of Educational Objectives: Affective Domain [5]).

D. Formulating objectives in terms of students' prescribed needs, aptitudes.

II. Formal training in systematic observation (multidimensional)*

A. The Reciprocal Category System (7); the verbal dimension

B. The Florida Taxonomy of Cognitive Behavior (4); the cognitive dimension

C. The Teacher Practices Observation Record (3); the experimental-nonexperimental dimension

D. The Taxonomy of Imagery Provocation (8); the concrete-representative-abstract dimension

III. Microteaching (or microsimulation); laboratory, controlled

A. Planning the lesson (written)

1. Statement of learning objective(s).

2. Construction of instrument (techniques) for measuring

---

*As many systems as time will permit might be selected from these listed here. Others are available.

learning.

3. Selection of proposed instructional strategies; planned and expressed in terms of the four observational systems shown above in II.

4. Selection and/or preparation of appropriate teaching aids and materials.

B. Teaching the lesson (can be conducted using either peers playing student roles or students brought in from public school (laboratory) classes).

1. Teach lesson while taped either by video or audio

2. Collection of "subjective" data by student teaching partner.

3. Collection of feedback from students regarding their subjective judgment concerning their appraisal of the teaching behavior.

C. Playback and observational data collection.

1. Collection of observational data by student and student partner using each of the four observational systems described above in II.

2. Prepare raw observational data for analysis.

3. Review video or audio tape for observations that are not recorded by the observational systems.

D. Analysis and evaluation of data with syudent partner and supervisor.

E. Revise and reteach the lesson (optional) or move on to the next micro experience.

IV. Microteaching (or microsimulation); in the field

Procedures are the same as in III except part B is conducted in an actual classroom in the field.

dimension of the classroom. It consists of nine common verbal behaviors, each of which can be assigned to either observed teacher or observed student talk. Usually, training in systematic observation begins with the Reciprocal Category System. It is manageable, not too difficult to learn, and seems to appeal to the students. Normally, it requires approximately 15-20 hours for students to learn the system.

Typically, the Florida Taxonomy of Cognitive Behavior (4) is the next in order to be learned. Based upon the Taxonomy of Educational Objectives: Cognitive Domain, the system contains 55 single items. If a particular behavior is observed, the number of that item is checked. If not observed, the item is left blank. Experience has indicated that once a system (any system) is learned, it requires the student much less time to master additional systems. In this case then, if the Reciprocal Category System is learned first, the Florida Taxonomy requires only some six to eight hours of formal training.

The Teacher Practices Observational Record (3) is predicated on the philosophy as purported by John Dewey. Consisting of 62 items, it looks at the classroom in terms of experimental and nonexperimental teacher behaviors. As in the Florida Taxonomy, if a behavior is observed, its item number is checked; if not observed, it is left blank. If a system has been learned previously, the student normally requires some six to eight hours

to learn this system.

The Taxonomy of Imagery Provocation (8) looks at the stimuli of the classroom in terms of the verbal-tactile and a concrete-representative-abstract framework. The system has its roots in the work done by Piaget and considers how the teacher manipulates these kinds of stimuli to complement and facilitate the cognitive activities of students. The Taxonomy of Imagery Provocation is a sign system (i.e., if an item is observed, it is checked; if not, it is left blank) and can be learned in less than ten hours of training if a system has been learned previously.

The procedures outlined in Section III, A3 of Figure 1 are unique to this particular program. In this exercise, the student is required to select instructional strategies that he judges to be appropriate for the learning objectives that have been set forth. In turn, he translates these in corresponding behavioral strategies that are constructed in terms of the mechanics of each observational system being considered (in this case, four). He generates a type of "hypothetical" data for each system describing the behavioral strategies that he plans to use. For example, in the case of the Reciprocal Category System, he will generate hypothetical data to describe the verbal behaviors that he plans to use and that he predicts the students will use. These data are filed and later compared

with the verbal data that are generated in the actual micro-teaching experience.

The exercise not only assists the student in building instructional strategies to suit a given situation, but, in addition, it provides him with an opportunity to test his "awareness - control" skill in classroom conditions. Finally, it provides him with "objective" feedback concerning 1) his plans, 2) his performances, and 3) the fit between the two. Experiences of this type can go a long way in impressing the student, that at least to some degree, teaching can be a predictable and controlled activity and not entirely a "seat of the pants" operation.

Summary

Far too many teacher training programs fail to prepare teachers properly to translate theory and beliefs concerning teaching effectiveness into practice at the classroom level. So that the situation can be improved, professors of education need to be innovative. They must take purposeful steps to develop new programs with fresh approaches that will succeed in bridging the widening theory-practice gap.

Systematic observation has been demonstrated to be one technique that shows promise for bridging this gap. A number of programs for training teachers to use observational systems have sprung up recently. However, the majority of these make use of

only a single system. A newer approach in this area takes better advantage of systematic observation by using several systems simultaneously to view the same classroom situation. The practice is called multidimensionality and it shows promise of being more effective for training teachers than the use of a single system.

Programs incorporating the multidimensional-systematic observational approach by their very nature tend to be more laboratory-oriented than lecture-oriented. The student is frequently involved in data collection activities both under simulated as well as actual conditions. He learns to observe and to be observed. He experiments with his own behavior and he observes his peers as they experiment with their behavior. The intended final outcome is that the student will begin to see his role more clearly and that he will perceive the teaching act to be more predictable than uncontrollable.

Bibliography

1. Amidon, E. and Flanders, N. The Role of the Teacher in the Classroom, Minneapolis: Paul S. Amidon and Associates, Inc., 1963.

2. Bloom, B. (editor). Taxonomy of Educational Objectives: Cognitive Domain, New York: David McKay Co., Inc., 1956.

3. Brown, B., The Experimental Mind in Education, New York: Harper and Row, 1968.

4. Brown B., Ober R., and Soar, R. "The Florida Taxonomy of Cognitive Behavior," Gainesville: University of Florida, 1967.

5. Krathwohl, D. Taxonomy of Educational Objectives: Affective Domain, New York: David McKay Co., Inc., 1964.

6. Ober, R. "Predicting Student Teacher Verbal Behavior." An unpublished doctoral dissertation, The Ohio State University, Columbus, Ohio, 1966.

7. Ober, R. The Reciprocal Category System, The University of South Florida, Tampa, 1969.

8. Solomon, G. "The Taxonomy of Imagery Provocation," Published by the author, West Virginia University, Morgantown, West Virginia, 1969.